

CHICAGO OPERATIONS OFFICE

Discussion Draft

Accelerating Cleanup: Focus on 2006

June 1997

Chicago Operations Office Environmental Management Program Discussion Draft

Executive Summary

The Chicago Operations Office (CH), located at the Argonne National Laboratory site in Illinois, is responsible for a wide variety of programs in basic and applied research and development. Activities of interest include research in: supporting the nation's advance reactor program; the fundamental properties of matter; the physical, life and environmental sciences; experiments with magnetic confinement fusion and; high energy physics. These research activities are conducted at a variety of government-owned installations, single-purpose research installations, multiprogram national laboratories, and university and industrial contractors. These CH sites include Ames Laboratory, Argonne National Laboratory-East and West, Brookhaven National Laboratory, Environmental Measurement Laboratory, Fermi National Accelerator Laboratory, New Brunswick Laboratory, and Princeton Plasma Physics Laboratory. Additionally CH is responsible for environmental surveillance and maintenance activities at Site A/Plot M, Piqua Nuclear Power Facility and Hallam Nuclear Power Facility. A map of these facilities is attached.

Site Summaries

Ames Laboratory

Ames Laboratory is an Energy Research (ER) laboratory in Ames, Iowa that conducts basic and applied research in the preparation, characterization, and evaluation of properties of metals and their alloys, especially rare earth metals. Ames Laboratory also performs materials research, high-performance computing, and environmental research. It seeks solutions to energy-related problems through the exploration of physics, chemistry, engineering, applied mathematics, and materials sciences.

Argonne National Laboratory-East

Argonne National Laboratory-East, in Argonne, Illinois, is an ER multidisciplinary research and development laboratory that conducts basic and applied research to support the development of energy-related technologies. Energy-related research projects include advanced reactor development, safety studies for light-water reactors, developing components and materials for fission and fusion reactors, superconductivity research, improvements in coal power, synchrotron radiation sources, and waste heat utilization. Further research includes medical radioisotope technology, environmental research, genetics research, materials engineering, ceramics, carcinogenesis, and the biological effects of ionizing radiation. Argonne-East is the home for the Advanced Photon Source facility which provides experimenting capability for industry, government, and academic scientists to explore photons and their link to advances in pharmaceuticals, adhesives, food processing, and many other applications.

Argonne National Laboratory-West

The current mission for Argonne National Laboratory-West, located west of Idaho Falls, Idaho, includes technology development for spent nuclear fuel and radioactive waste treatment, reactor and fuel cycle safety, and closure of the Integral Fast Reactor Program. These activities are administered through the Office of Nuclear Energy (NE).

Brookhaven National Laboratory

Brookhaven National Laboratory is an ER facility in Long Island, New York, whose current mission is to conduct fundamental research, including conception, design, construction, and operation of large complex research facilities. These facilities are used for both basic and applied research in high energy and nuclear physics; in basic energy sciences emphasizing fundamental research on biological, chemical, and physical phenomena underlying energy-related transfer, conversion and storage systems; and in the life sciences, and nuclear medical applications of nuclear techniques.

Environmental Measurement Laboratory

Also in New York, the Environmental Measurement Laboratory is a government owned-government operated analytical laboratory which provides technical support to the Environmental Management Program and other federal agencies in the site characterization program; site closure initiative; world-wide monitoring program; non-proliferation/nuclear treaty initiative; and near-background levels of radiological/non-radiological development and validation.

Fermi National Accelerator Laboratory

Fermi National Accelerator Laboratory, located in Batavia, Illinois, is an ER facility whose mission is to conduct research in high-energy physics. High-energy physics explores the fundamental structure of matter using high energy particle accelerators. Fermilab operates the Tevatron, which is the world's highest energy particle accelerator.

New Brunswick Laboratory

New Brunswick Laboratory, located on the Argonne site in Illinois, is government owned-government operated. The Lab's mission is to serve as the U.S. Government's certifying authority for nuclear reference materials and provides an independent Federal technical staff and laboratory resource performing nuclear material measurements, safeguards and non-proliferation functions in support of multiple program sponsors.

Site Summaries (continued)

Princeton Plasma Physics Laboratory

Princeton Plasma Physics Laboratory in Princeton, New Jersey, is a single purpose ER laboratory focusing on research and development for fusion energy programs. The Laboratory is engaged in a broad spectrum of plasma physics research ranging from the theoretical analysis and modeling of fusion plasmas to the laboratory testing of plasmas approaching the conditions necessary for an energy producing fusion reactor.

Piqua Nuclear Power Facility

The Piqua Nuclear Power Facility, located north of Dayton in the town of Piqua, Ohio, was dismantled and decommissioned between 1967 and 1969. The Piqua Nuclear Power Facility is currently undergoing surveillance and maintenance activities under the purview of the CH Environmental Management Program.

Hallam Nuclear Power Facility

The Hallam Nuclear Power Facility is located on a small portion of the 640-acre site of the present Sheldon Power Station, owned by the Nebraska Public Power District. The entombed reactor is located slightly southeast of the center of the site. The Hallam Nuclear Power Facility has no current mission. Activities at the site are limited to semi-annual surveillance and maintenance.

Site A/Plot M

Site A/Plot M is the former site of early activities by the Manhattan Engineer District between 1942 and 1956. Site A/Plot M is located within the Palos Forest Preserve in Cook County, Illinois and is owned by the Forest Preserve District of Cook County. Site A contained two experimental nuclear reactors and associated research laboratories. Plot M was used for the burial of radioactive waste from experimental research at Site A. Initial work involved research and the development of radioisotopes and fission products for uses in defense and non-defense activities. Removals of radiological hot spots and soils contaminated with heavy metals were completed in October 1996. Site A/Plot M is currently undergoing monitoring of groundwater, soil and air to affirm that there is no significant spread of contamination. Surveillance and maintenance activities have been on-going at Plot M since 1973 and expanded to include 17 new wells at Site A.

CH Environmental Management Vision

The vision of the CH's Environmental Management Program is to complete cleanup at its sites by 2006. CH will do so while protecting the environment, human health, and worker safety through risk reduction and compliance with federal, state and local statutes. CH will work towards producing tangible results with consensus from stakeholders while ensuring that there is responsible management of public funds.

Changes From July 1996 “Ten Year Plan”

The framework for the 2006 Plan, originally named “The Ten Year Plan”, and some its key assumptions have changed since developing the July 1996 documents. The most significant changes are:

- The actual funding received in Fiscal Year 1997 and the Fiscal Year 1998 funding allocation as submitted to Congress are used in both funding cases. These fundings represent reductions from previous planning documents. These reductions have extended schedules at Argonne-East and Brookhaven National Laboratories. While both sites are still planned to be completed by 2006, the pace of clean up is fiscally constrained.
- Two separate funding scenarios are addressed for the years Fiscal Year 1999 to Fiscal Year 2006, a low funding case (\$5.5B) and an high funding case. The low funding case is based on a approximately four percent reduction from the Fiscal Year 1998 funding. The high funding case is presented to document what is required to complete the program mission in an efficient and cost effective manner.
- With the reduced fundings, efficiency targets are being established. Specific goals include lowering contractor support costs to 30 percent and reductions in direct costs of 3.5 percent per year for all Environmental Restoration activities and 6 percent for all Waste Operations activities.

CH Waste Management Program

The CH Waste Management Program is designed to ensure the minimization, safe handling, and disposal of waste generated at its sites. The Waste Management Program provides a support function to generators of waste at each of the CH research laboratory sites. This function includes: collection, treatment, storage and disposal of waste, program implementation, program development for waste generation avoidance, and facility management of treatment and storage facilities. Currently, CH plans to deal with its legacy (historical) waste through on-site treatment, treatment at DOE and commercial facilities, and disposal at other DOE sites. Much of this legacy waste has already been treated and/or removed from the CH sites.

A DOE Waste Management Alternatives Working Group was formed in 1995 to recommend alternatives to reduce costs and increase efficiencies, reconfigure responsibilities to promote waste generator accountability, and implement controls to reduce waste quantities (both newly generated and legacy). Based on the results of this study a preliminary decision has been made to transfer all waste operations activities to their respective landlord program sponsors. Agreement has been reached between Environmental Management, Energy Research, and Nuclear Energy to pilot this transition. Fermi and Argonne National Laboratory-W will be transferred to Energy Research and Nuclear Energy, respectively in Fiscal Year 1998. The transfer at Argonne National Laboratory-West will include responsibility for the remote handled sodium contaminated TRU waste. Final agreement on the timing and the funding reallocations for the remaining sites have not been made.

CH Waste Management Program (continued)

The assumptions made for this Discussion Draft are that the transfer will be completed at the beginning of Fiscal Year 2000 and that funds allocated by Environmental Management for waste management activities will be transferred to the appropriate landlord program at that time. There will be no CH waste operations activities after Fiscal Year 2000 that are funded by the Environmental Management Program.

Environmental Restoration Program

The Chicago Environmental Management Discussion Draft focuses on Environmental Restoration interim and end states with proposed site completions. The Discussion Draft utilizes a “Clean Labs” strategy which demonstrates technology applications, aggressive interim actions, accelerates schedule completions, maximizes near-term site completions, optimizes work sequencing and achieves cost savings while restoring seven sites for beneficial reuse by 2006. These sites include Site A, Ames Laboratory, Argonne National Laboratory East and West, Brookhaven National Laboratory, Princeton Plasma Physics Laboratory--Site C/D and Princeton University-Site A/B. The schedule of Environmental Restoration Site completions are attached for both funding scenarios.

This Discussion Draft benefits the Department in several ways.

- Multiple small release sites are environmentally restored for seven sites.

- DOE owned sites are more quickly available for reuse. The safety of the environment is restored thereby ensuring protection of the public at sites located in densely populated areas.

- Cost savings are achieved.

- Federal employees are available for other work.

- Non DOE owned sites are returned to private owners.

By 2006, all sites will have been completed with the exception of some residual pump and treat activities at DOE's Brookhaven National Laboratory. Surveillance and maintenance activities at Hallam, Piqua and Site A will be transferred to the Grand Junction Project Office.

Chicago Environmental Restoration Strategy

The CH Discussion Draft feasibility is based on a clearly stated vision, stakeholder input, and well defined end states which are consistent with future use planning at the Chicago sites. A broad range of contracting strategies to achieve success are being implemented. These include performance based management contracts, alliances with industrial partners and competitive fixed price contracting. The Chicago ER program has successfully utilized these and other innovative contracting mechanisms to achieve high levels of cost and schedule performance in the past.

Chicago Environmental Restoration Strategy (continued)

The overall strategy for the low funding case revolves around completing our smaller sites early, shortening the schedule for Brookhaven National Laboratory, and sequencing and optimizing restoration activities at Argonne National Laboratory-East. The Discussion Draft addresses higher risk activities first while making effective use of funding.

Reengineering efforts have been completed at Brookhaven National Laboratory and Argonne National Laboratory-East to achieve the 2006 vision. The reengineering effort at Argonne National Laboratory-East identified an approximately \$100 million savings due to risk based end states, more competition for work assignments, and reduced environmental uncertainty.

The constraints of the low funding case force the Argonne National Laboratory-East schedule for this optimized program to be stretched so that completion does not occur until the end of Fiscal Year 2006. The high funding case allows for a more expeditious schedule completing the roughly \$60 million program by the end of Fiscal Year 2001. Charts that illustrate the differences between the cases are attached. Likewise, the low funding cases delays the Brookhaven National Laboratory clean up schedule by two years as indicated on the following page.

Performance Enhancement

As discussed in previous sections, the CH Discussion Draft is already developed with a number of performance enhancement initiatives that are in place. These include the following:

- Maintaining a CH Support Cost Rate that is already under the 30 percent level, which is identified as a goal in the Discussion Draft.
- Implementing the Accelerated Management Cleanup Strategies at all CH sites
- Utilizing Technology Applications
- Implementing Cost Saving Strategies identified through Benchmarking and other initiatives

These initiatives will continue to be implemented as part of the on going efforts. It is the specific goal of the Chicago Operations Office to be the first DOE Field Office to complete its EM Mission.

Compliance with Legal Requirements

In both the CH Restoration and Waste Management Programs, compliance with environmental regulations will be maintained under either funding scenario. This includes meeting milestones established in Compliance Agreements, and meeting Federal, State, and Local environmental and legal requirements. Additionally, the Discussion Draft allows for the disposal of newly generated Radioactive Low Level Waste (LLW) to avoid storing this waste for disposal at a future date. To maintain compliance with regulations, funding reductions will first be achieved by storing LLW and by delaying Decontamination and Decommissioning activities which are not compliance driven.

Public Involvement in the Discussion Draft

DOE and EM clearly recognize the need to work with regulators and stakeholders in developing the Discussion Draft 2006. A 90 day public comment period will immediately follow the release of the Discussion Draft. As part of this effort, Chicago Operations is very interested in working with regulators and stakeholders with the goal of making decisions that reflect public concerns and priorities. As such, we are very interested in receiving your thoughts and ideas on the CH Discussion Draft. To facilitate this discussion, a copy of the CH Discussion Draft is available for review at the information repositories listed on the attached page. The comment period will end on September 9, 1997. Please send your comments on the Chicago Discussion Draft to:

Mary Jo Acke
Public Participation Coordinator
U.S. Department of Energy
Chicago Operation Office
9800 South Cass Ave
Argonne, IL 60439

In addition, workshops may be held on the Discussion Draft if interest is expressed by stakeholders. Information on the date, time and location of these meetings will be provided in separate mailings. If you have any questions, would like to learn more about the Discussion Draft, or want a presentation on the Discussion Draft made to your group or organization, please call Mary Jo Acke at (630) 252-8796.

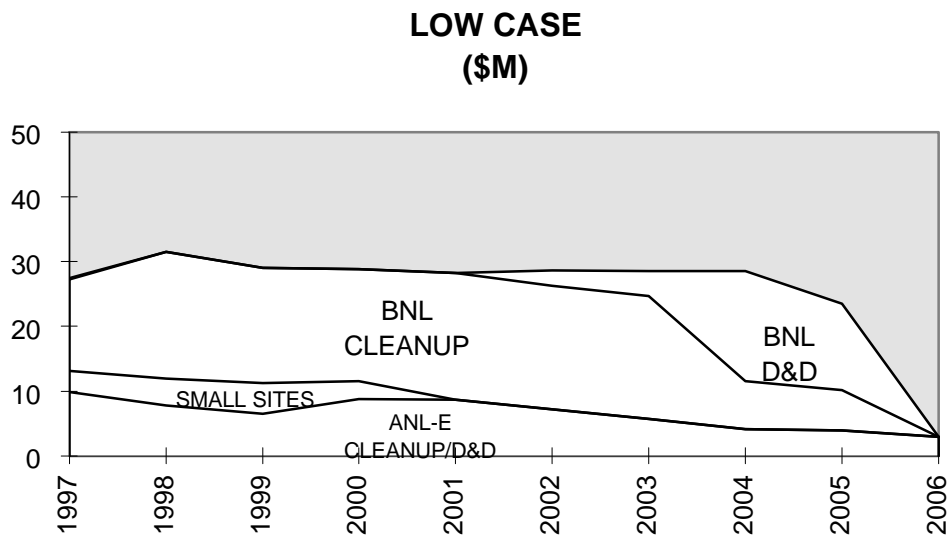
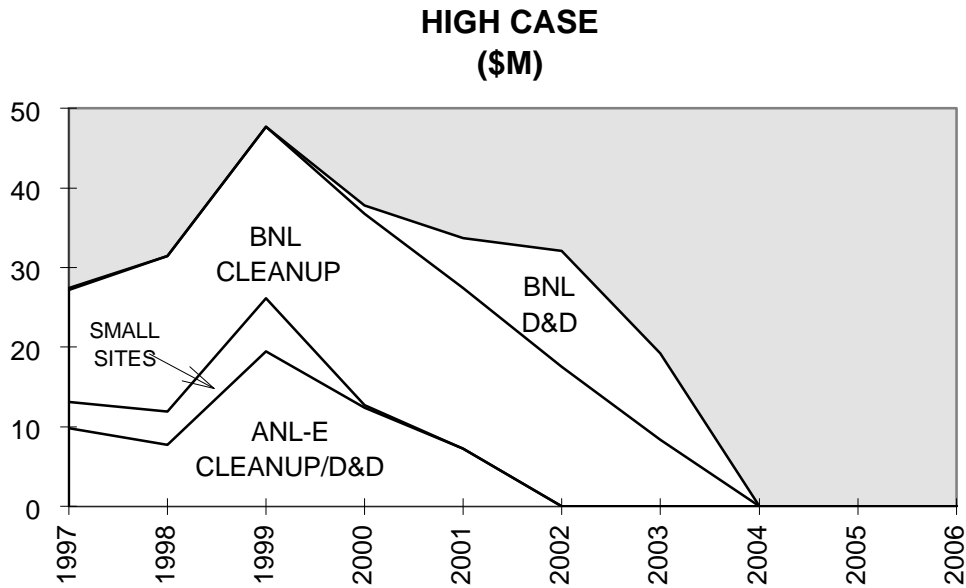
Comments on the National Discussion Draft can be submitted to:

U.S. Department of Energy
Mr. Gene Schmitt
P.o. Box 44818
Washington, D.C. 20026-4481
E-Mail address: FocusOn2006@EM.DOE.GOV (not case sensitive)
Call (800) 736-3282 to request a copy of the Discussion Draft

EM in parallel effort has asked sites to involve stakeholders in the formulation of the FY99 budget. The EM FY99 budget is being developed concurrently with the Discussion Draft. In July, EM will be holding a national feedback session to discuss the EM national FY99 budget. The options and alternatives described in the discussion draft and future iterations of the 2006 Plan will impact budget formulation and execution activities. This planning process will allow EM to develop annual budgets in the context of long term objectives.

Additional sources of information about the U.S. Department of Energy, the Environmental Management Program and the Discussion Draft may be obtained by visiting the DOE Website at www.em.doe.gov or by calling The Center for Environmental Management at 1-800-736-3282.

CHICAGO OPERATIONS OFFICE FUNDING FOR ENVIRONMENTAL RESTORATION ACTIVITIES



Chicago Operations Office

Information Repository Locations

All Chicago Sites

University Library
Documents Department
The University of Illinois at Chicago
801 South Morgan Street - 3rd Floor, Center
Chicago, IL 60680
312/996-2738

Mailing Address

Documents Department
University Library
P.O. Box 8198
University of Illinois at Chicago
Chicago, IL 60680

Ames Laboratory

Ames Public Library
Reference Section
515 Douglas Avenue
Ames, IA 50010
515/239-5645

Argonne National Laboratory

Lemont Public Library
1136 State Street (temporary address)
Lemont, IL 60439
630/257-6541

Indian Prairie Public Library
Reference Section
401 Plainfield Road
Darien, IL 60561
630/887-8760

Brookhaven National Laboratory

Longwood Public Library
Reference Department
800 Middle County Road
Middle Island, NY 11953
516/924-6400

U.S. EPA Records Center
290 Broadway
New York, NY 10007-1866
212/637-4296

Brookhaven National Laboratory
Research Library - Building 477A
Upton, NY 11973
516/282-3489

Mastics-Moriches-Shirley Community Library
425 William Floyd Parkway
Shirley, NY 11967
516/399-1511

Princeton Plasma Physics Laboratory

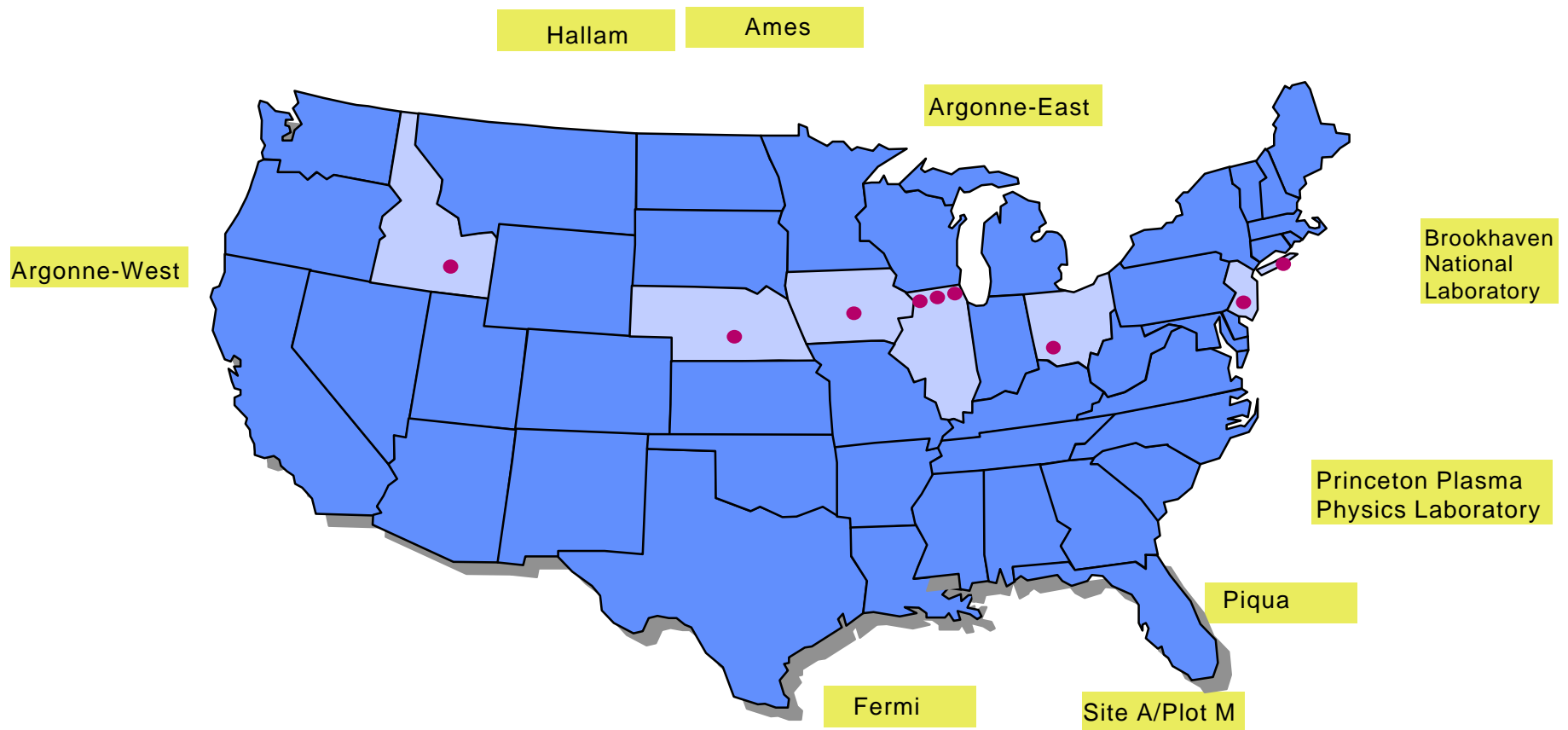
Middlesex County Library
Plainsboro Branch
Plainsboro, NJ 08536
609/275-2897

Site A/Plot M

Bedford Park Public Library
7816 West 65th Place
Bedford Park, IL 60510
708/458-6826

Bridgeview Public Library
7840 West 79th Place
Bridgeview, IL 60455
708/458-2880

Chicago Operations Office Environmental Management Office



Chicago Operations Office
Environmental Management Program
Accelerating Cleanup: Focus on 2006

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